

INTEGRATED PACKAGE DESIGN AND METHOD FOR A RADIATION SENSING DEVICE

ABSTRACT OF THE DISCLOSURE

A radiation detector (10) has a base (30), a frame (48), a window (46), and solder layers (50, 52) formed from a solder pre-form (58, 60) to define a vacuum chamber (56). Feedthroughs (18, 40, 44) penetrate the base (30) for electrical connection to internal components. A method for sealing the detector (10) aligns a lower detector assembly (62), the frame (48) the window (46), and the solder pre-forms (58, 60) in a non-sealed relation within a processing chamber (80, 94). High temperature and low pressure is imposed, and the getter (42) is activated by resistive heating imposed by current leads (88). The window (46), frame (48), and lower detector assembly (62) are then pressed together and sealed by the liquefied solder pre-forms (58, 60). The method eliminates the need for a seal port, combines several steps within the processing chamber (80, 94), and eliminates certain prior art cleaning steps.